

Double Bag VARTM for High Temperature Composites, Phase II

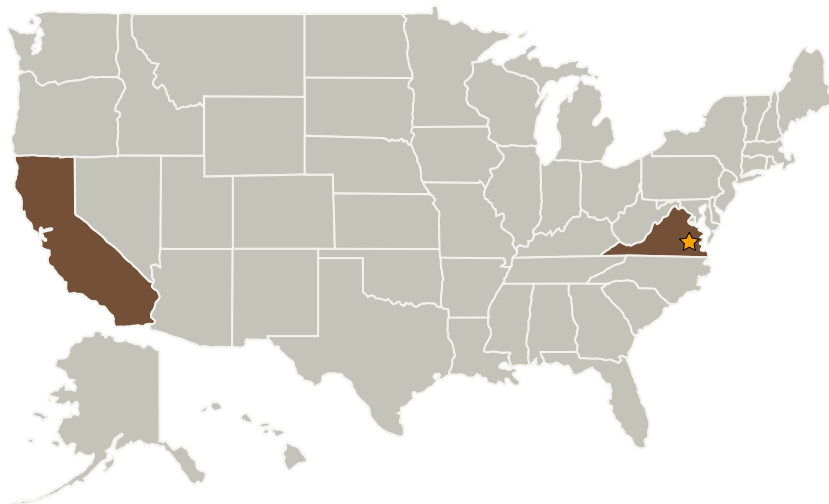
Completed Technology Project (2008 - 2010)



Project Introduction

The process known as double bag vacuum assisted resin transfer molding (DBVARTM) was developed by NASA to help deplete by products. To date, the NASA DBVARTM process has reduced void content to approximately four to five percent. This number has fallen short of the goal of two percent. During the Phase I effort, San Diego Composites (SDC) was able to reduce the void content to 0.8 percent to 1.5 percent. There are three primary technical objectives to the Phase II effort. The first objective is to perform a trade study to evaluate and optimize the effect of stitched performs. Stitching has had a large effect on the void content in the laminate and several different stitching variables will be evaluated. The second objective is to transition the work done in Phase I to larger components. These components will consist of larger plates and structures will be evaluated using non destructive testing along with mechanical testing. At the end of the Phase II effort, a full scale component will be fabricated, evaluated using non destructive testing, and then the component will be tested. The final objective is to transition the technology to Boeing Phantom Works. This objective will demonstrate that the process developed in a laboratory can be reproduced at any facility. By the end of the Phase II program, the Technology Readiness Level (TRL) is expected to be 5-6.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Langley Research Center (LaRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★ Langley Research Center(LaRC)	Lead Organization	NASA Center	Hampton, Virginia
San Diego Composites, Inc.	Supporting Organization	Industry	San Diego, California

Primary U.S. Work Locations

California	Virginia
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Project Transitions

**December 2008:** Project Start**September 2010:** Closed out

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX14 Thermal Management Systems
 - └ TX14.1 Cryogenic Systems
 - └ TX14.1.3 Thermal Conditioning for Sensors, Instruments, and High Efficiency Electric Motors